


	<p style="text-align: center;"><b>CHEMISTRY 301L</b> <b>Syllabus</b></p>  <p style="text-align: center;"><b>Fall 2009</b></p>	
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**Course Description:** Experimental Course in which students will learn basic mini scale techniques for purification and determination of physical characteristics of organic compounds such as boiling point, melting point, and density. The students will be introduced to organic nomenclature and functional groups. The students will obtain and learn to interpret GC, IR, and NMR spectra. The students will also learn separation techniques and will perform several basic organic syntheses. Students will be required to learn proper presentation of technical information through preparation of ACS- style laboratory reports.

**Prerequisites:** CHEM 101 and CHEM 102 **Corequisite:** CHEM 301 lecture Students should have the study skills and time to devote to assignments for successful completion of this course.

**CHEM 301 L Goals: Successful students will:**

Acquire the skills necessary to perform all the techniques outlined in the course description,  
Perform calculations to evaluate laboratory performance and the elements of error analysis,  
Demonstrate the techniques necessary to provide proper presentation of technical information, and  
Develop scientific thinking skills.

**Learning Outcomes:** After completing this course the student will:

- have the ability to use most laboratory techniques useful in the organic laboratory
- have a basic understanding of organic nomenclature
- have a working knowledge of separation, purification, and identification methods
- demonstrate a working knowledge of Infrared Spectroscopy and Gas Chromatography
- have the ability to interpret Infrared and NMR spectra

**Assessment Methods:** Exams will include multiple choice and short answer essay questions, problems based on experimental results (% yield, % error), and interpretation and depiction of spectra characteristics. The lab report portion of the final grade will be based on performance on four formalized lab reports and various homework assignments totaled as a fifth lab report. Lab reports will be graded on technical presentation, science content, and technical writing. Students will work as teams in the laboratory and collaborate in writing lab reports.

**Grading Policy:**

- a. 4 exams; (400 pts) 40% of final grade
- b. Lab Reports (500 pts) 50% of final grade
- c. Lab Note Book (50 pts) 5% of final grade
- d. Assignment (50 pts) 5% of final grade

The grading scale is a modified ten point grading scale. **Grades will not be curved.**

A = 85-100; B = 75-84; C = 65-74; D = 55-64; F = 0-54

**Attendance Policy:** Attendance is mandatory for lab sessions. Class attendance regulations as stated on the MSU web site will be adhered to and followed. To become familiar with the attendance policy, students should view <http://www.mcneese.edu/policy/attendance.php>. If a lab or an exam is missed, the student must present a valid excuse to the instructor at the first class period he or she returns to class. Acceptable excused absences for tests include: 1) personal illness (with a doctor's excuse), 2) an official university function (with a university excuse), or 3) a death in the student's immediate family. The student is responsible for making arrangements for the date, time, and place of the make-up exam or assignment. If you have a university-excused absence or problem, please contact the instructor in advance.

**Method of Instruction:** Instruction will consist of a variety of the following techniques: pre-lab lectures with discussions of concepts; collaborative work on pre-lab write-ups; web site explorations; familiarization with laboratory equipment and instrumentation (gc, IR, NMR, etc.); hands on experience through laboratory experiments; instruction on interpretation of various spectra in the lecture and as a part of laboratory experiments; and instruction in technical writing skills through critique of student presented materials.

**Course and University Policies:**

♦ **Diversity Statement:** Students should visit the MSU web page at <http://www.mcneese.edu/policy/diversity.php> for information about diversity awareness and sexual harassment policies and procedures.

♦ **Faculty Syllabus Reasonable Accommodation Statement:** Any student with a disability is encouraged to contact the Office of Services for Students with Disabilities in Drew Hall, Room 200, voice (337) 475-5916; TDD(337) 475-5722. It is each student's responsibility to register with the Office of Services for Students with Disabilities when requesting a reasonable accommodation.

♦ **Academic Integrity Statement:** McNeese State University seeks to strengthen the value of student academic achievement by fostering a learning environment which is based on honesty, respect, fairness, responsibility, and excellence. Consequently, the University expects students to demonstrate honesty and integrity in all academic relationships. Please visit <http://www.mcneese.edu/integrity/> for details on this policy.

**Laboratory Safety/Rules:**

♦ Students should wear proper attire for lab sessions including closed-toe shoes. **OSHA approved safety glasses are required in all chemistry labs.** For information about eye safety link to: <http://www.eyesafety.4ursafety.com/eye-safety-training.html> Aprons and gloves may be required for some sessions.

♦ Hazardous waste material must be disposed of according to directions given in lab sessions.

♦ Cell phone use is not permitted during the pre-lab lecture or laboratory sessions. Please notify instructor should you need to use a cell phone during laboratory sessions due to an emergency situation. **No food or drink is allowed in the chemistry laboratories.**

	Date	Lab	
Week 1	Aug 18 <sup>th</sup>	Introduction/Safety	

	Aug 20 <sup>th</sup>	Check in/Melting Point	*
Week 2	Aug 25 <sup>th</sup>	Recrystallization	*
	Aug 27 <sup>th</sup>	IR	
Week 3	Sept 1 <sup>st</sup>	Isolation of Natural Products	
	Sept 3 <sup>rd</sup>	Isolation of Natural Products	
		<b>Examination 1</b>	
Week 4	Sept 8 <sup>th</sup>	Stereochemistry	
	Sept 10 <sup>th</sup>	Stereochemistry	
Week 5	Sept 15 <sup>th</sup>	Steam Distillation/GCMS	
	Sept 17 <sup>th</sup>	Steam Distillation/GCMS	
Week 6	Sept 22 <sup>nd</sup>	NMR	
	Sept 24 <sup>th</sup>	NMR	
Week 7	Sept 29 <sup>th</sup>	NMR	
	Oct 1 <sup>st</sup>	NMR	
		<b>Examination 2</b>	
Week 8	Oct 6 <sup>th</sup>	Identification of Unknown	
	Oct 8 <sup>th</sup>	Identification of Unknown	
Week 9	Oct 13 <sup>th</sup>	E1 Preparation of Cyclohexene	
	Oct 15 <sup>th</sup>	E1 Preparation of Cyclohexene	
Week 10	Oct 20 <sup>th</sup>	SN1 Preparation of t-butyl chloride	
	Oct 22 <sup>nd</sup>	SN 2 Preparation of 1-bromobutane	
		<b>Examination 3</b>	
Week 11	Oct 27 <sup>th</sup>	Oxidation of alkenes	
	Oct 29 <sup>th</sup>	Acetylation	
Week 12	Nov 3 <sup>rd</sup>	Make up Labs	
	Nov 5 <sup>th</sup>	Make up Labs	
Week 13	Nov 10 <sup>th</sup>	Review/Check out	
	Nov 12 <sup>th</sup>	Review/Check out	
Week 14	Nov 17 <sup>th</sup>	FREE	
<b>Examination 4 (November 19, 2009)</b>			

- In-Course Tests are cumulative and will be held on Friday of indicated week. Reviews sessions for all tests will be held Thur prior to test (30 min).
- All tests are compulsory and may not be dropped or substituted.
- All tests are 60 min in duration and will consist of a written and short answer portions.